ABSTRACT

AIM :

The aim of the study is to evaluate the smear layer removal using single file system along with various irrigating solutions viz Naocl, EDTA, and Qmix.

OBJECTIVES:

- To compare smear layer removal using single file system, Hyflex EDM and Wave One Gold.
- To evaluate smear layer removal ability of Qmix, Naocl and EDTA.

METHODOLOGY:

A total of Sixty single rooted human mandibular premolars which showed no caries or any developmental defects were used in this study. ISO size #15 K file was used for working length determination of each root canal. Before instrumentation, the specimens were divided into two group of 30 teeth each. Under Group A - thirty teeth were prepared using Hyflex EDM file. Under Group B – thirty teeth were prepared using WaveOneGold files. Again after instrumentation the specimens were further subdivided according to irrigants used under Group A into three subgroups A1-Naocl, A2-EDTA & A3-Qmix. Under Group B it is subdivided into three subgroups B1-Naocl, B2-EDTA & B3-Qmix. Then the prepared teeth were split along the longitudinal axis into two halves and they are used for further analysis. The samples were then examined and photographed using a scanning electron microscope.

RESULTS:

Result of this present study revealed that the scores for smear layer removal were significantly lesser in Wave One Gold- Qmix group (B3) when compared with other groups. There was significant difference between coronal and the middle third, while there is no significant difference between the apical third of the root canal.

CONCLUSION:

1. WaveoneGold group has better smear layer removal ability than Hyflex EDM group.
2. Qmix group showed lesser score, where smear layer removal is better than the Naocl and EDTA group.
3. In all the groups there was increased smear layer removal at the coronal and middle third when compared to the apical third of the root canal.

Key words: WaveOneGold, Hyflex EDM, EDTA, Qmix & SEM analysis.